

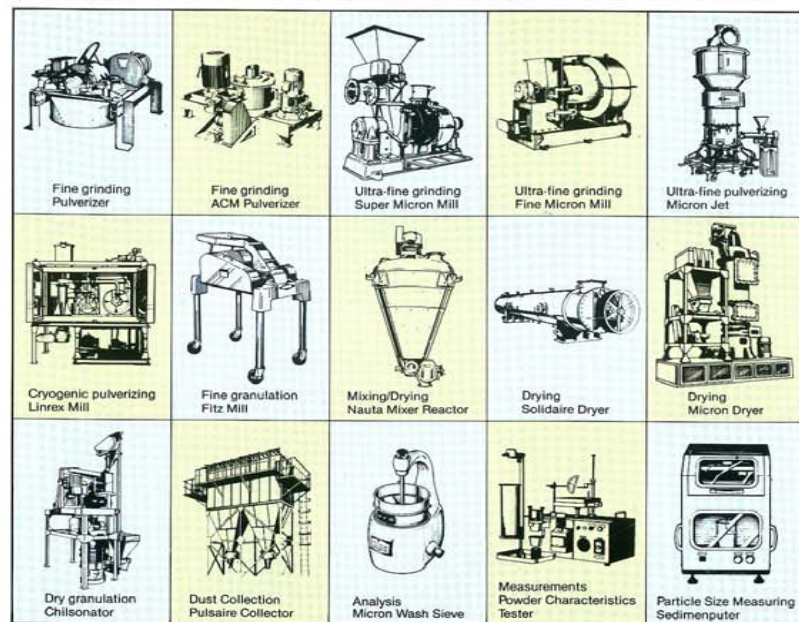
HOSOKAWA MICRON

LEADER OF POWDER PROCESSING TECHNOLOGY

From a Single Unit to a Complete Treatment System

Hosokawa has specialized in powder processing technology for over 75 years. Today Hosokawa makes a complete line of advanced equipment for fine-grinding, classifying, drying, mixing, dust collection,

and measurement. Yet, Hosokawa's most distinguished feature is still its flexible system engineering to satisfy a wide variety of needs. Whenever you have a powder problem, come to Hosokawa.



Your Local Distributor:



HOSOKAWA MICRON CORPORATION

INTERNATIONAL SALES DEPT.

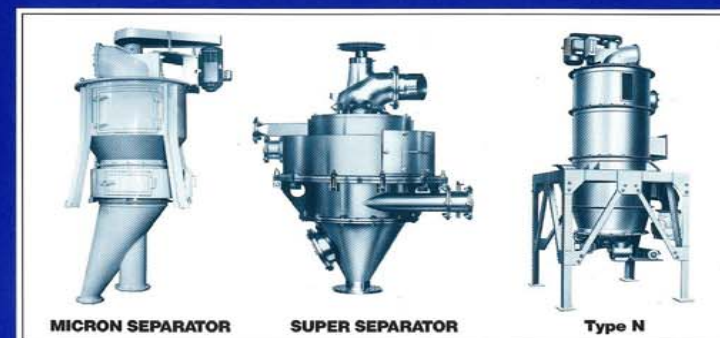
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MICRON SEPARATOR



HOSOKAWA MICRON CORPORATION

HOSOKAWA MICRON SEPARATOR:

For the Changing Needs of Today's Industry



A loaf of bread, a lipstick, an LSI ceramic package, an acrylic blouse: what do these things have in common? All of them can be improved by the Hosokawa Micron Separator.

The particles that make up these and other products vary in their characteristics as their size changes; a change in particle size, for example, can often even turn inert material into an explosive. For paint to give a uniform coating, particles larger than a desired size must be removed. If filter media particles are finer than necessary, filtration will be obstructed.

Activated carbon absorbent or abrasive quartz grit must be classified within a narrow range of particle sizes. Particle size must be carefully controlled in chemical reactions since the surface area of the material (determined by the particle size) is an important



factor of the reaction speed. We need to classify particles then, to obtain materials with properties suitable for the application at hand, and it is difficult to control super-fine particle size with just a sieving machine.

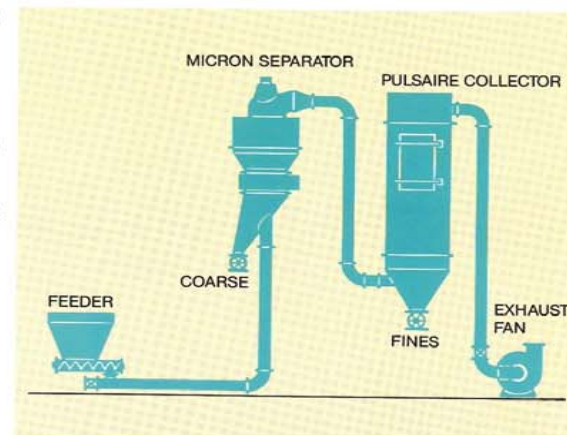
Industry needs a precise, consistent classifier, and the Micron Separator is it: a mechanical, centrifugal air classifier, the culmination of years of theoretical and applied research.



FLOW SHEET

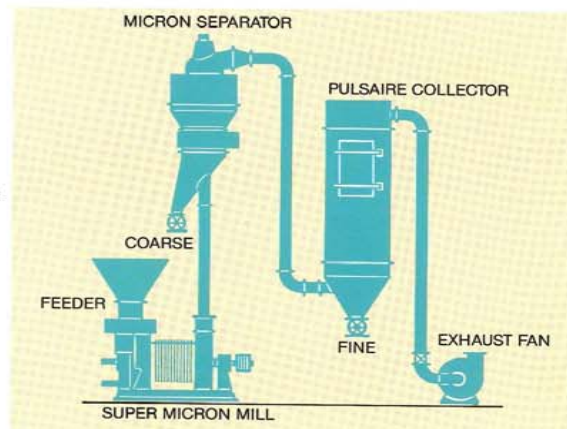
Standard Classification System

This is the standard setup of the Micron Separator with an ancillary feeder, Pulsaire Collector, and fan. Material fed into the ducting by the feeder is air-conveyed to the Micron Separator. The classified coarse is discharged through the outlet in the conical chute, while the classified fines are conveyed pneumatically into the Pulsaire Collector. Many of these systems have been delivered for the classification of cement, zirconium sand, alumina, activated carbon, and coke.



Grinding and Classifying System

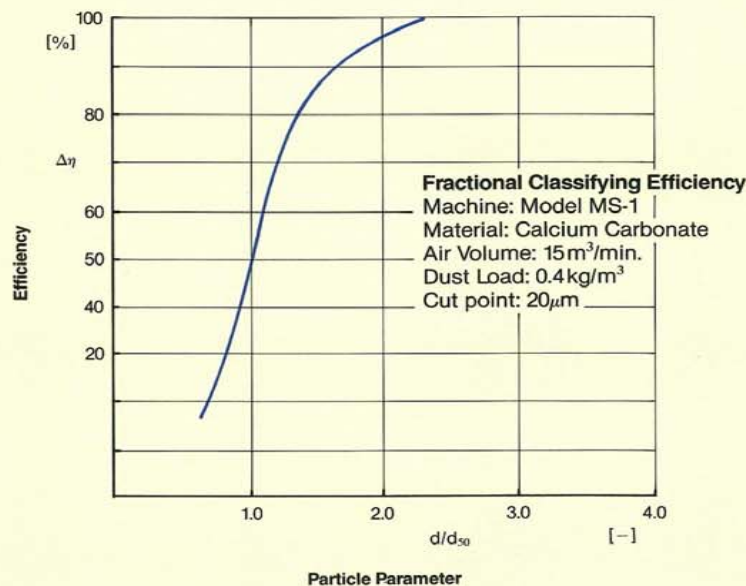
This is a typical setup in combination with the Super Micron Mill. The use of the Micron Separator with any pulverizer will considerably increase the performance of the pulverizer. The system shown at right grinds and classifies such materials as chalk, talc, clay, and graphite to produce fine particles.



PERFORMANCE DATA

The graph shows the Micron Separator's performance in terms of the partial classifying efficiency curve. "d" is particle diameter, and "d₅₀" indicates that the partial classifying efficiency is 50% for this diameter. The curve in the graph proves the excellence of the Micron Separator in fine classification.

Classifying efficiency generally lowers as the particle-air ratio increases, mainly because particles are recovered without being classified.



The Three Distinct Types for Field-Proven Precise Classification of Micron Particles

MICRON SEPARATOR

The Micron Separator is a standard model, adjustable over a wide range of particle sizings from 3 to a few hundreds micron for wide applications. It can handle spheres, flakes, and fibers, both organic and inorganic.



SUPER SEPARATOR

Has excellent classification capabilities with sharp cut points, from super-fines down to a few microns.

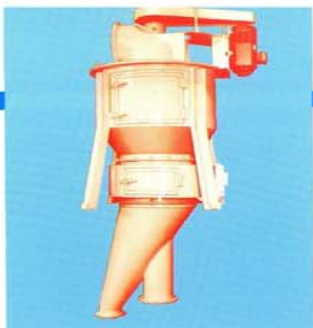


SEPARATOR TYPE N

The Separator Type N is specifically designed to handle large volumes of materials with relatively coarser cut points, such as calcium carbonate, cements, slaked limes, etc.



MATERIAL	MODEL	INPUT CAPACITY kg/hr	PRODUCT FINENESS
Bean-curd refuse	MS-2	200	150 mesh pass
Organic chemicals	MS-3	300	99% pass 30 μm
Epoxy resin	MS-3	300	150 mesh all pass
Perlite	MS-3	350	99.2% minus 200 mesh
Scrap rubber	MS-3	500	30 μm all pass
Granular sugar	MS-3	1,000	13 μm cut
Wheat flour	MS-3	2,500	97% pass 10 μm
Zinc	MS-4	800	99.8% pass 300 mesh
Phenolic resin	MS-4	800	Max 10 μm Av. 1 μm
Calcium carbonate	MS-4	1,000	98% pass 10 μm
Talc	MS-4	1,100	95% pass 5 μm
Alumina	MS-4	1,200	60 mesh cut
A B S resin	MS-4	1,300	98% pass 10 μm
Activated clay	MS-4	2,000	90% pass 10 μm
Manganese dioxide	MS-4	2,000	Brain value more than 6,000 cm ² /g
Cement	MS-5	1,500	200,300 mesh cut
Zirconium sand	MS-5	3,000	325 mesh all pass
Bentonite	MS-5	6,500	300 mesh cut
Coal	MS-5	7,500	200 mesh cut
Chromite	MS-6	18,900	0.1% pass 5 μm
Toner	MSS-1	35	0.2% pass 3 μm
Zeolite	MSS-1	95	99 + % pass μ m
Cerium oxide	MSS-1	30	90% pass 5 μm
Ferrite	MSS-1	40	Average 1.3 μm
Hydrocarbon	MSS-1	35	- 5 μm 100%
Calcium carbonate	MSS-1	80	Average 2.7 μm
Metallic silicon	MSS-1	40	90% pass 10 μm
Mica	MSS-1	70	Average 1.5 μm
Manganese dioxide	MSS-1	50	Average 1.5 μm
Zirconium sand	MSS-1	40	99 + % pass 10 μm
Bentonite	MSS-1	40	97% pass 5 μm
Magnesium hydroxide	MSS-1	30	75% pass 10 μm
Alumina ceramic	MSS-1	30	Under 200 mesh
Hydrated lime	MS-3N	4,000	99.5% pass 60 mesh
Fish meal	MS-4N	6,000	85% over 100 mesh
Glauber salts	MS-4N	8,500	99.4% over 95 μm
Corn cob	MS-4N	9,000	92% pass 46 μm
Calcium carbonate	MS-4N	15,000	



MICRON SEPARATOR : Standard and High Speed

**Sharp Cut Point,
Broad Classification Range**

The Micron Separator is unique in the field of fine powder classification. Conventional air classifiers are not suitable where a broad range of particle cut sizes are required, from 3 to 150 μ m. Some classifiers have high capacities for coarse-range particles but cannot efficiently classify fines below 50 μ m. Others can classify the fine-range particles but not the larger particles. Still others have low efficiency regardless of cut point. The Micron Separator, however, has a high capacity, high efficiency, and cut points ranging from 3 to 150 μ m. The Micron Separator has the widest application range, highest capacity and highest overall efficiency of any commercial classifier. The cosmetic, chemical, food, pharmaceutical and other industries have made the Micron Separator their choice for the classifying process. These separators are now operating at high capacities, with Newton efficiencies from 60% to 90%.

Wide classification range

Select any particle size between 3 and 150 μ m. Classify spherical, flaky, and fibrous particles; separate fiber from recycled rubber powder or classify sawdust. The Micron Separator can classify any material, organic or inorganic.

High-precision classification

The classifying rotor uses principles of fluid dynamics to create a stable centrifugal force field. This prevents the remixing of coarse particles (grit) and ensures precise classification.

High recovery rate of fine particles

Unique rotor and secondary air sieve combine to recover 60% to 90% of the fine particles.

Simple operation and particle size adjustment

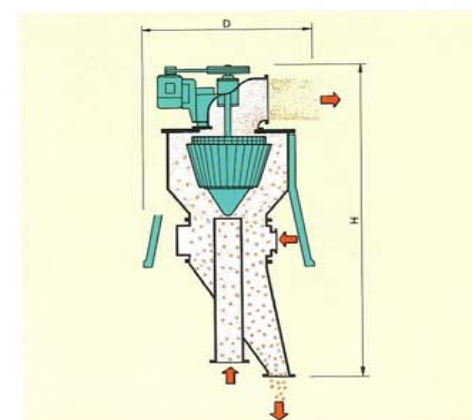
Simple operation and design eliminate the need for a skilled operator. Particle size is easily adjusted by changing the rotor speed.

Compatible with various powder processing machines for closed-circuit operation

The capacity of a pulverizing machine and mill doubles when installed side by side with a Micron Separator. Closed-circuit operation permits the pulverizing of heat-sensitive materials or products with low fusing points.

HOW IT WORKS

The Micron Separator classifies particles by balancing the centrifugal force of the rotor and the centripetal force of the air. Material to be separated is sucked in by the fan through the inlet duct, up to the rotor where the opposing two forces classify it. Fine particles, more susceptible to centripetal force, are carried on the air current through the rotor and discharged through the upper outlet duct. On the other hand, coarse particles, more susceptible to centrifugal force, flow down the inside wall of the machine and go out the coarse particle discharge. Since the rotor speed determines the centrifugal force, particle size can be easily adjusted by changing the rotor speed.



SPECIFICATIONS

MODEL	MOTOR SIZE kw	ROTOR SPEED Max. rpm.	AIR VOLUME m ³ /min	CAPACITY kg/hr	DIMENSIONS D mm/H mm	WEIGHT Kg
STANDARD						
MS-1	0.75	2,300	10-15	150	700/1,500	150
MS-2	1.5	1,700	25-40	350	830/2,150	300
MS-3	2.2	1,500	50-80	750	1,200/2,700	600
MS-4	5.5	1,100	100-150	1,500	1,560/3,200	1,200
MS-5	11	800	200-300	3,000	2,300/5,500	3,000
MS-6	22	550	400-600	6,000	2,800/7,000	6,000
MS-7	37	300	800-1,200	12,000	3,500/9,000	12,000
HIGH SPEED						
MS-1H	3.7	5,000	8-12	50-120	700/1,500	150
MS-2H	5.5	4,000	20-30	150-300	830/2,150	300
MS-3H	11	2,300	40-70	300-700	1,200/2,700	600
MS-4H	22	2,200	80-120	600-1,200	1,560/3,200	1,200
MS-5H	45	1,600	150-200	1,200-2,000	2,300/5,500	3,000